

FIG. 1
(PRIOR ART)

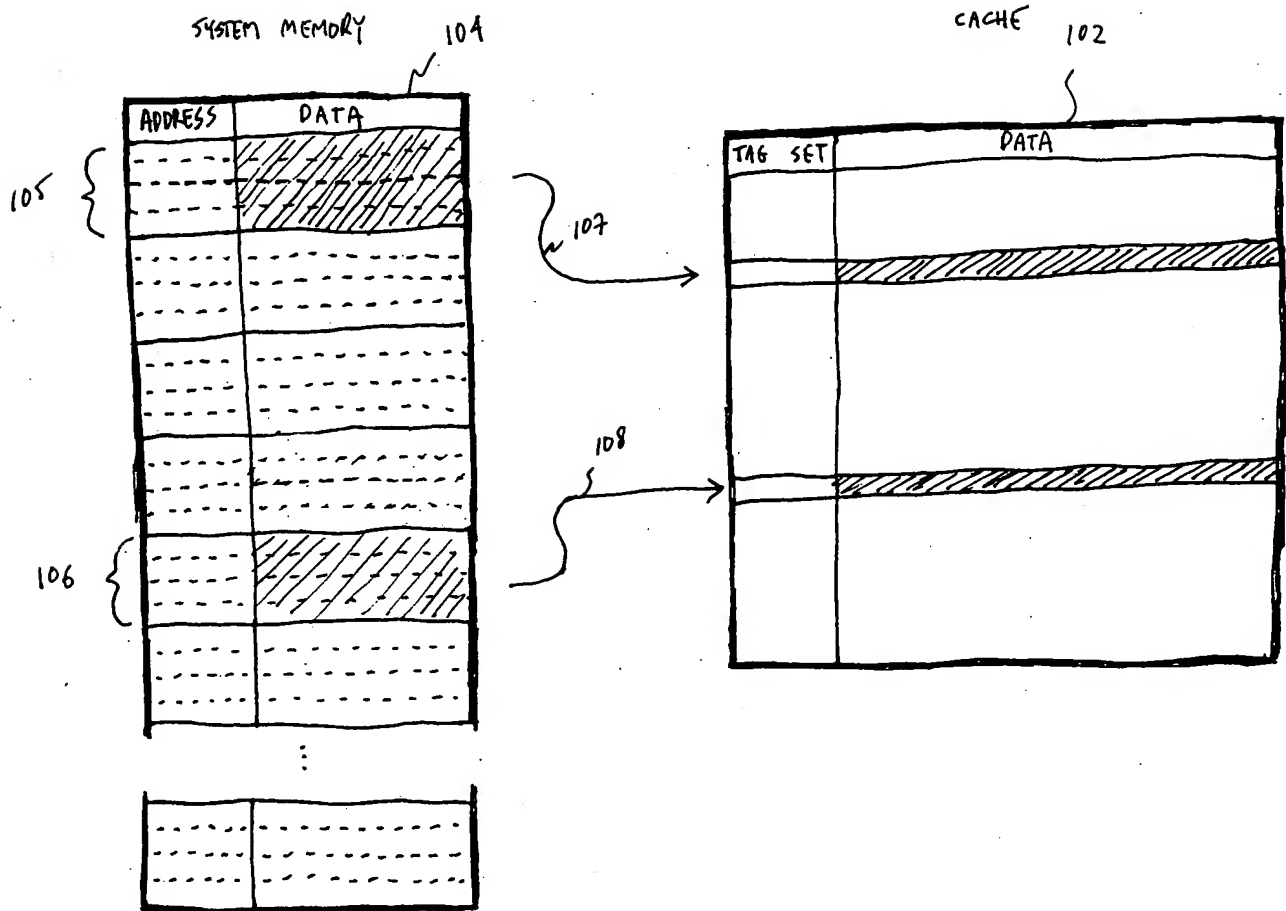


FIG. 2
(PRIOR ART)

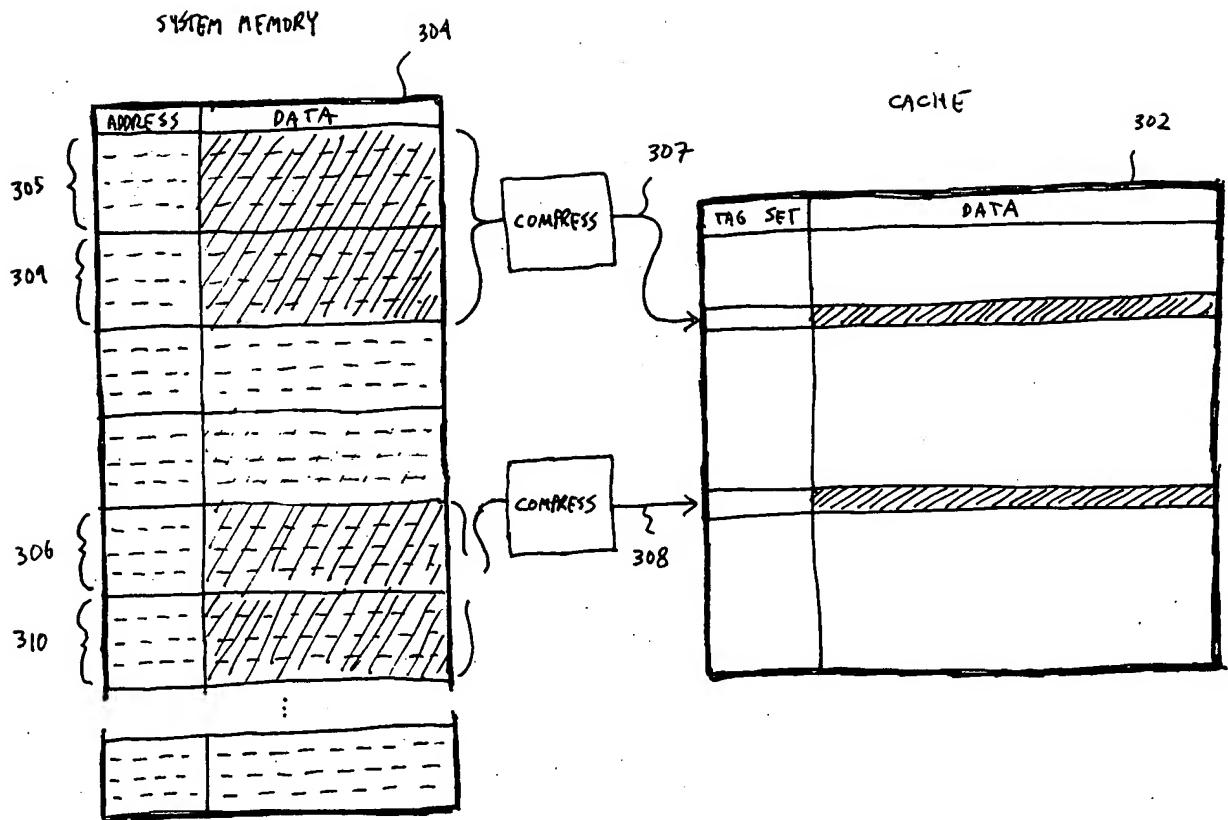


FIG. 3A

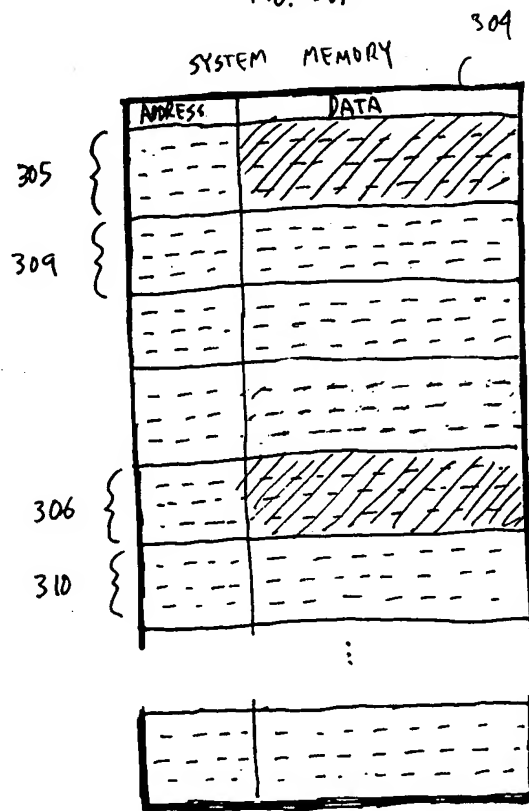


FIG. 3B

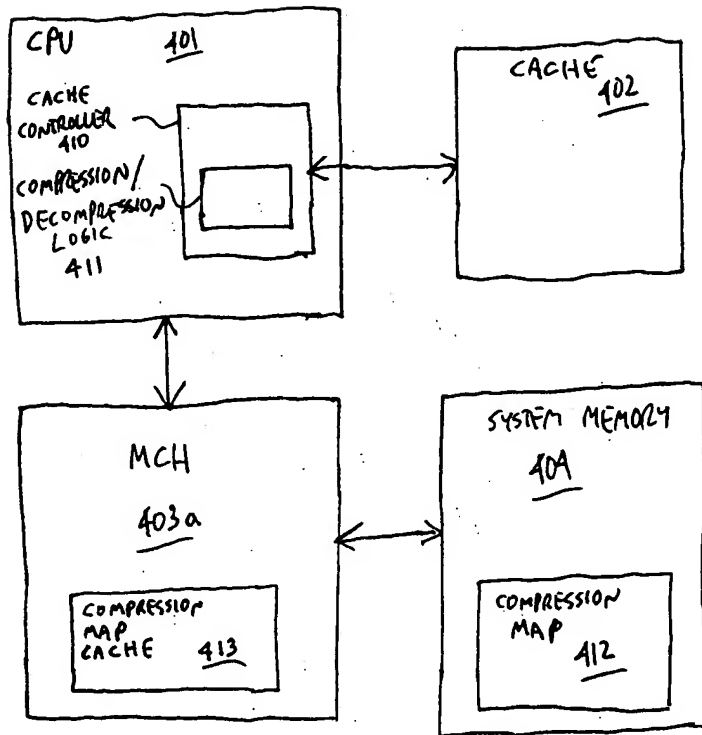


FIG. 4A

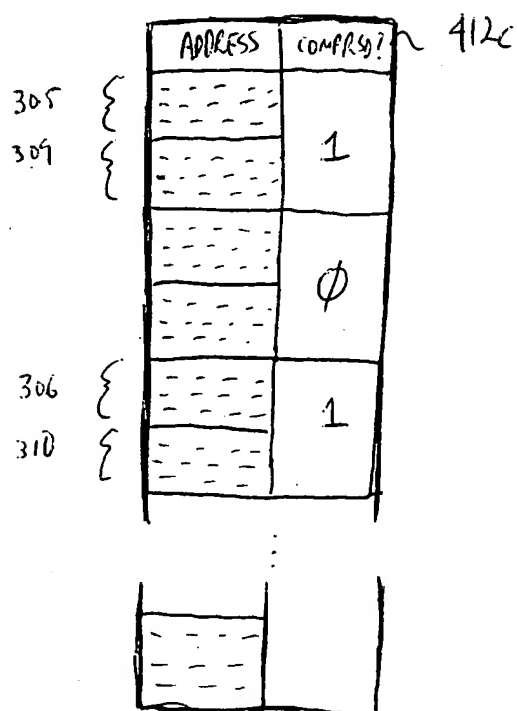
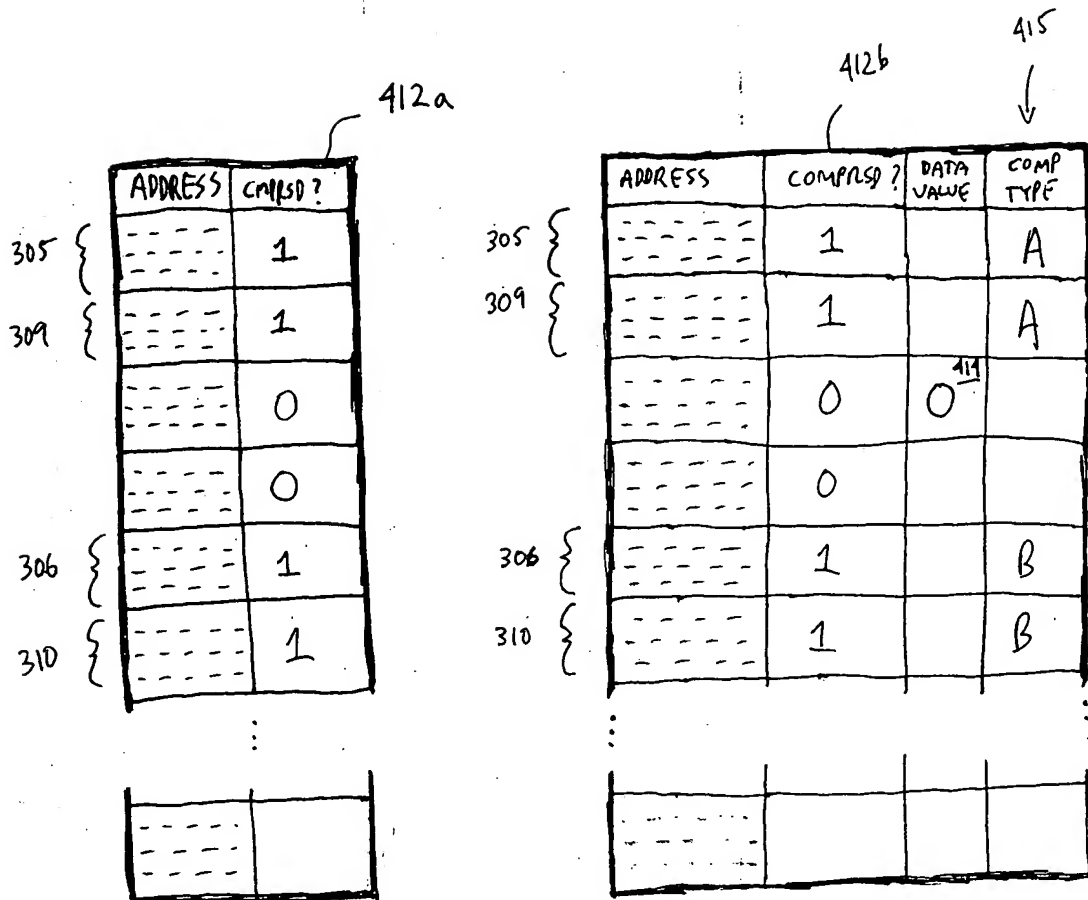


FIG. 4B

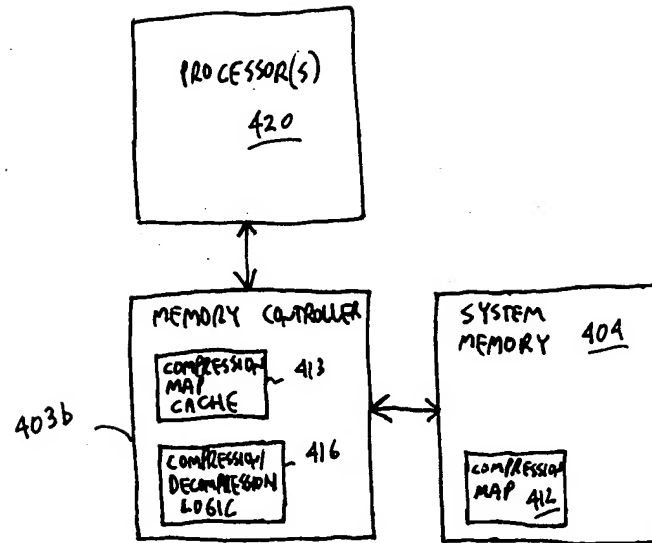


FIG. 4C

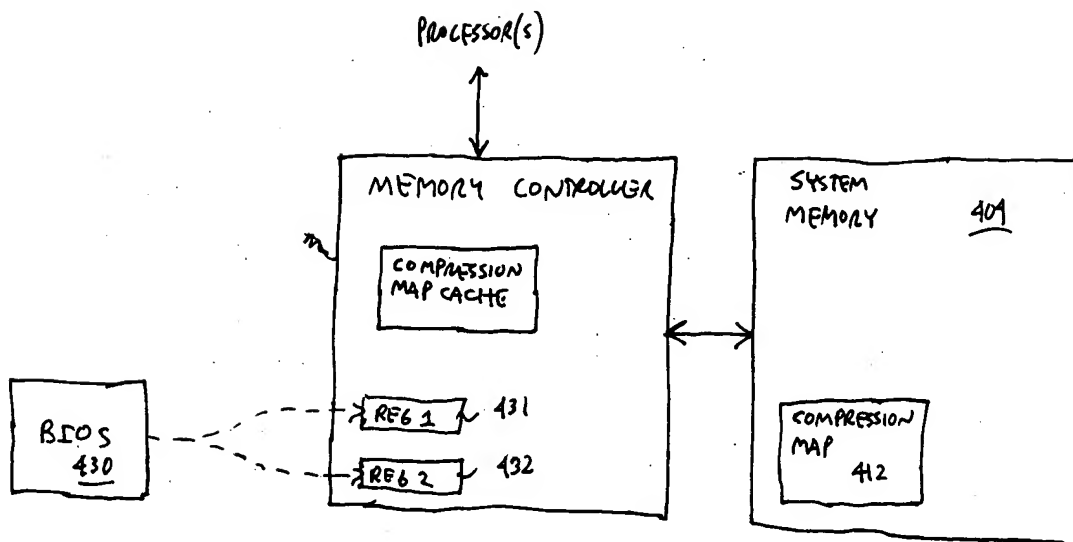
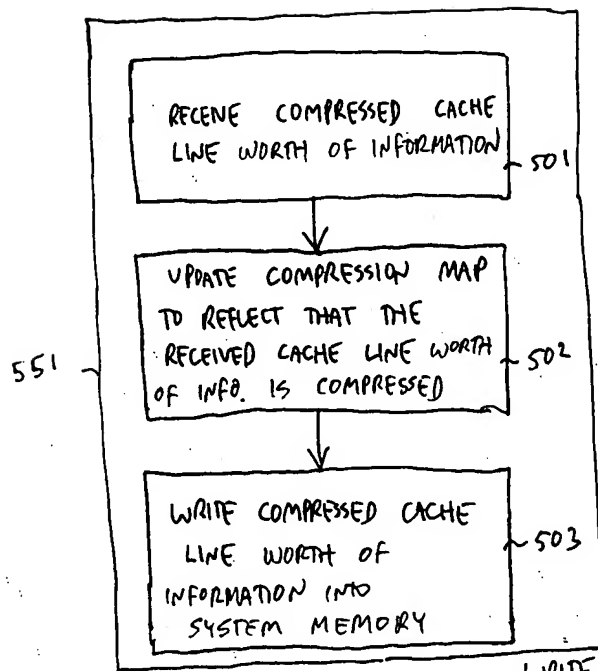


FIG. 4D



WRITE METHODS

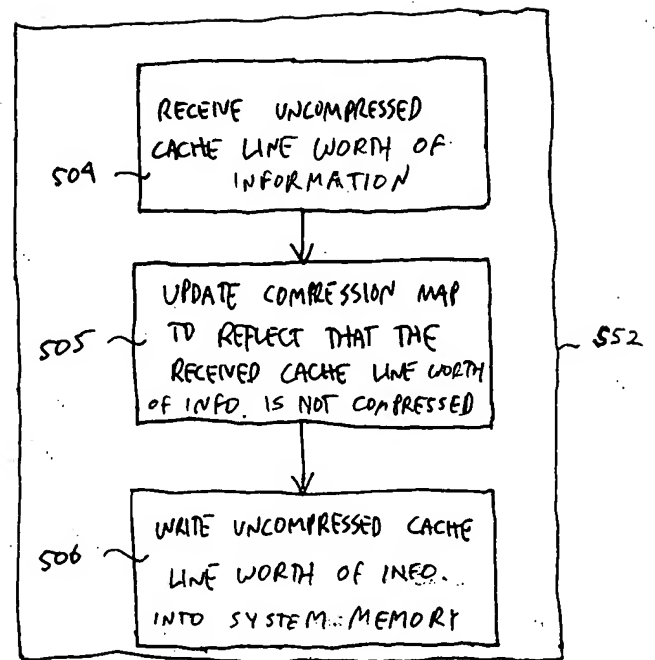
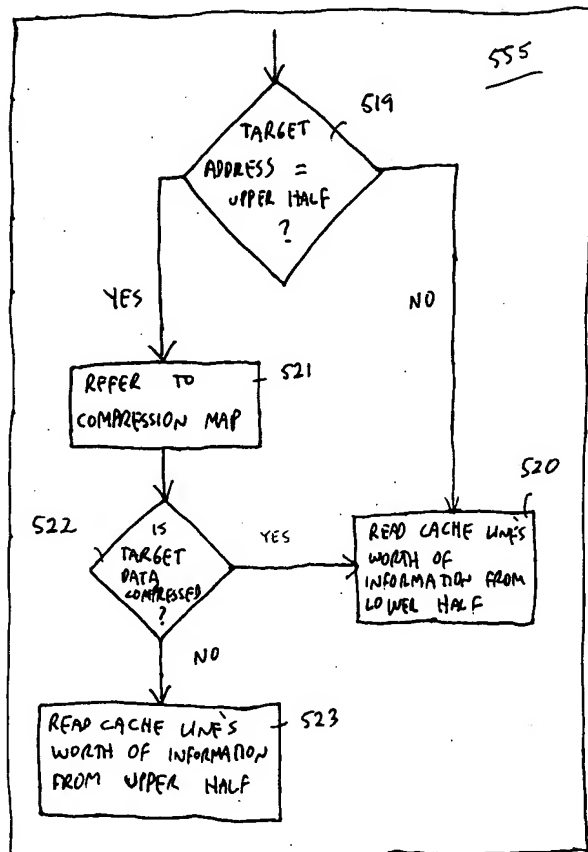
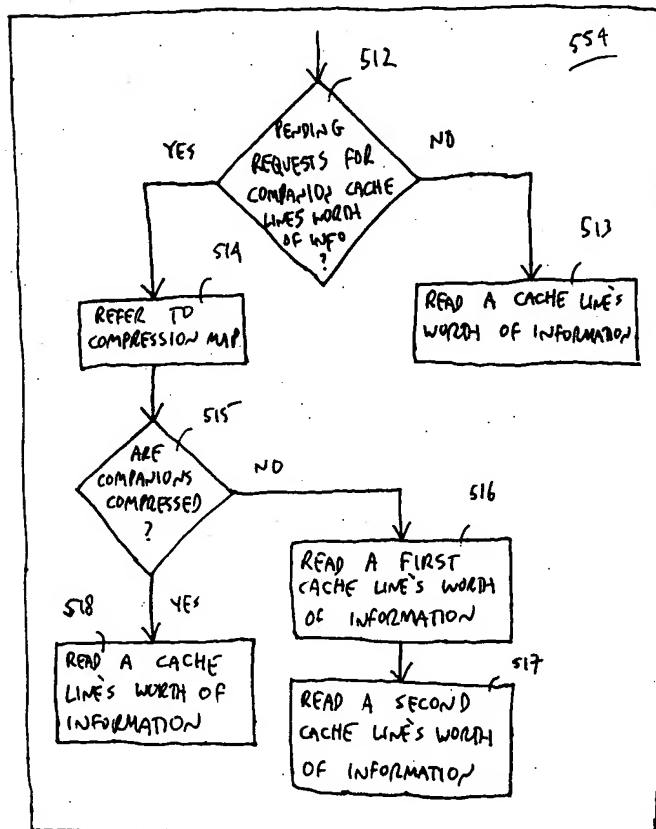
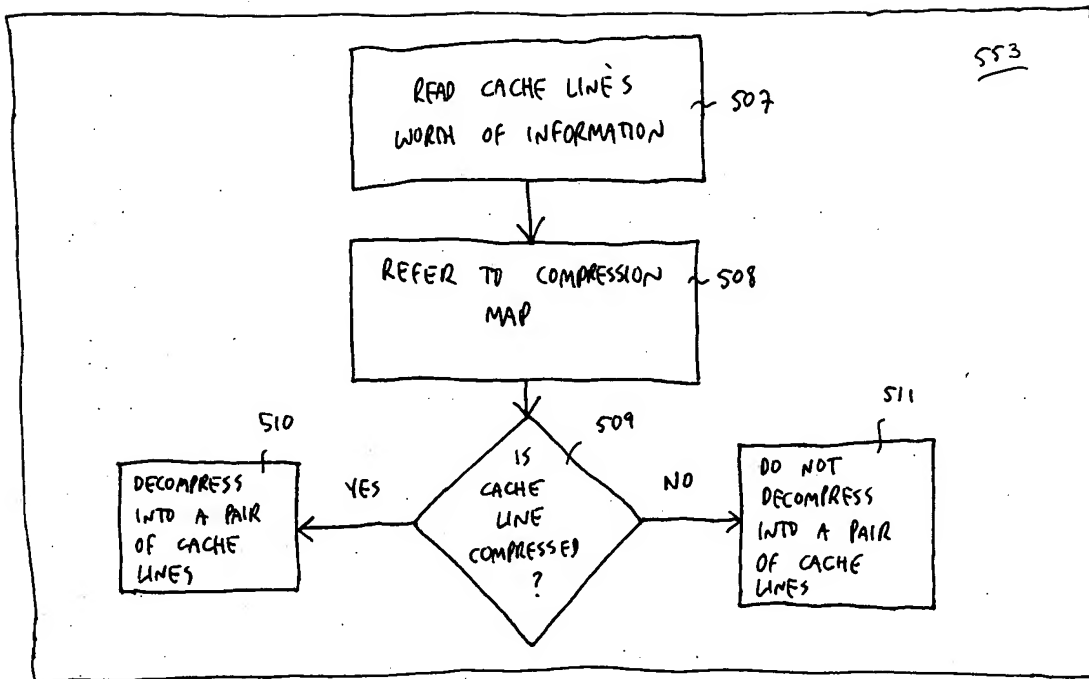


FIG. 5A



READ METHODS

FIG. 5B

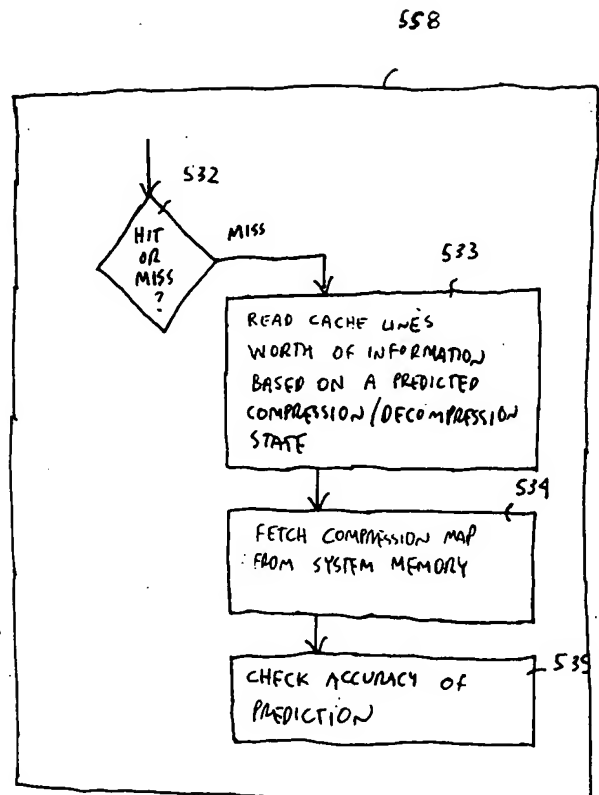
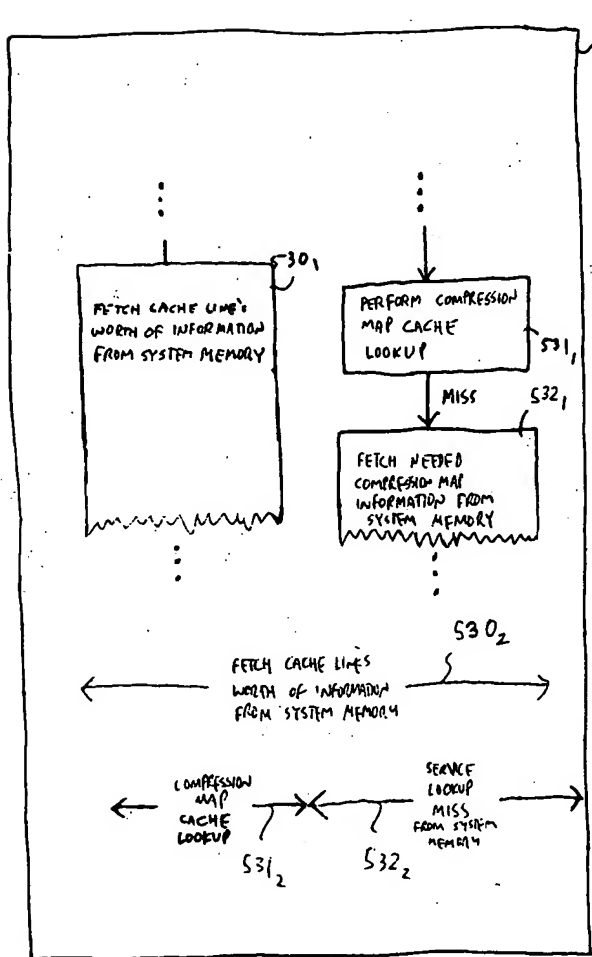
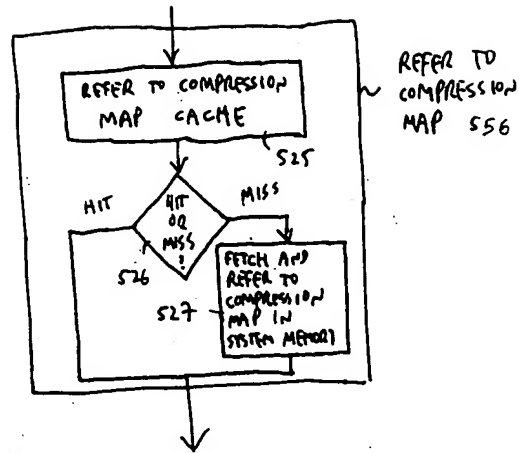


FIG. 5C

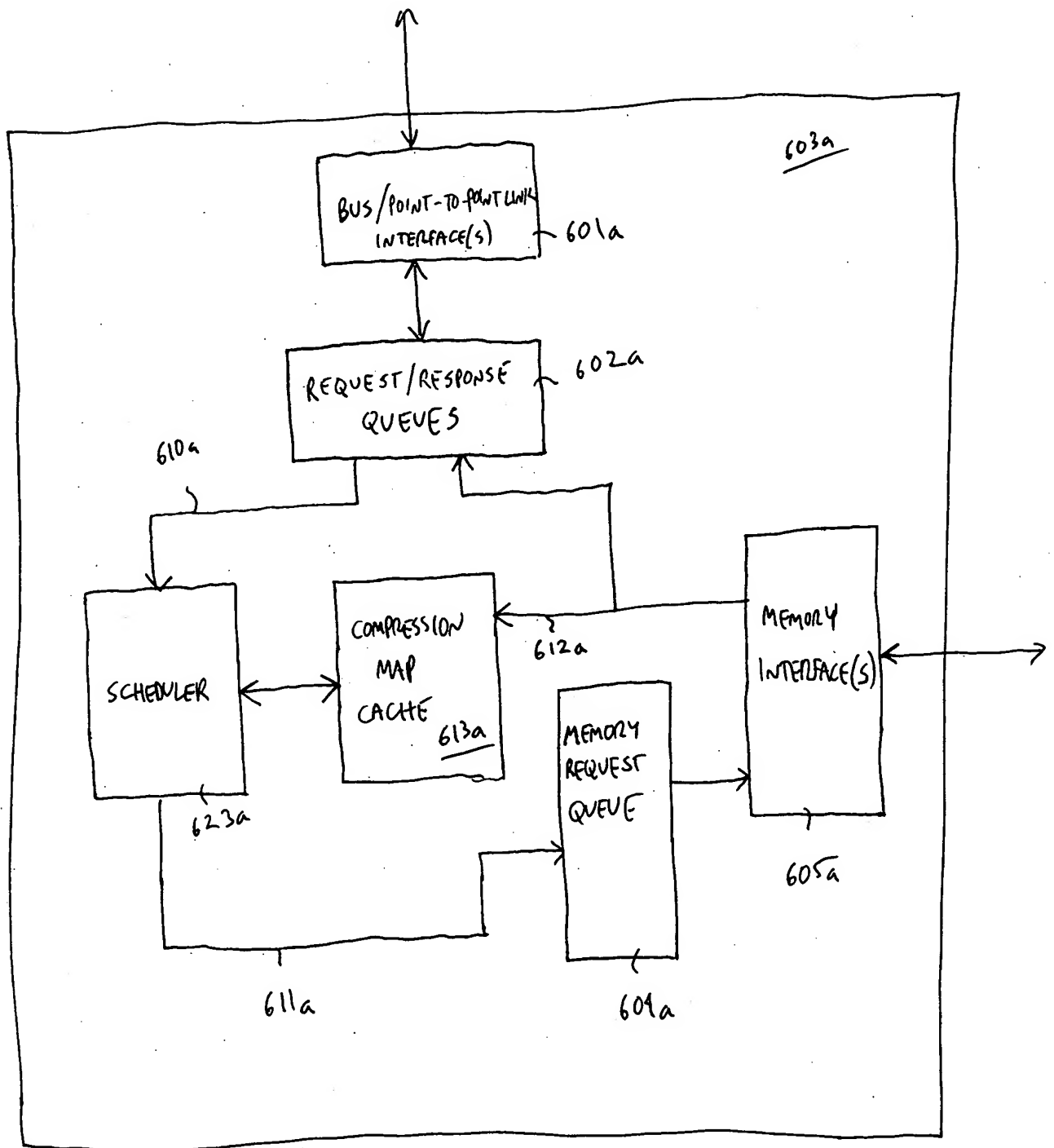


FIG. 6A

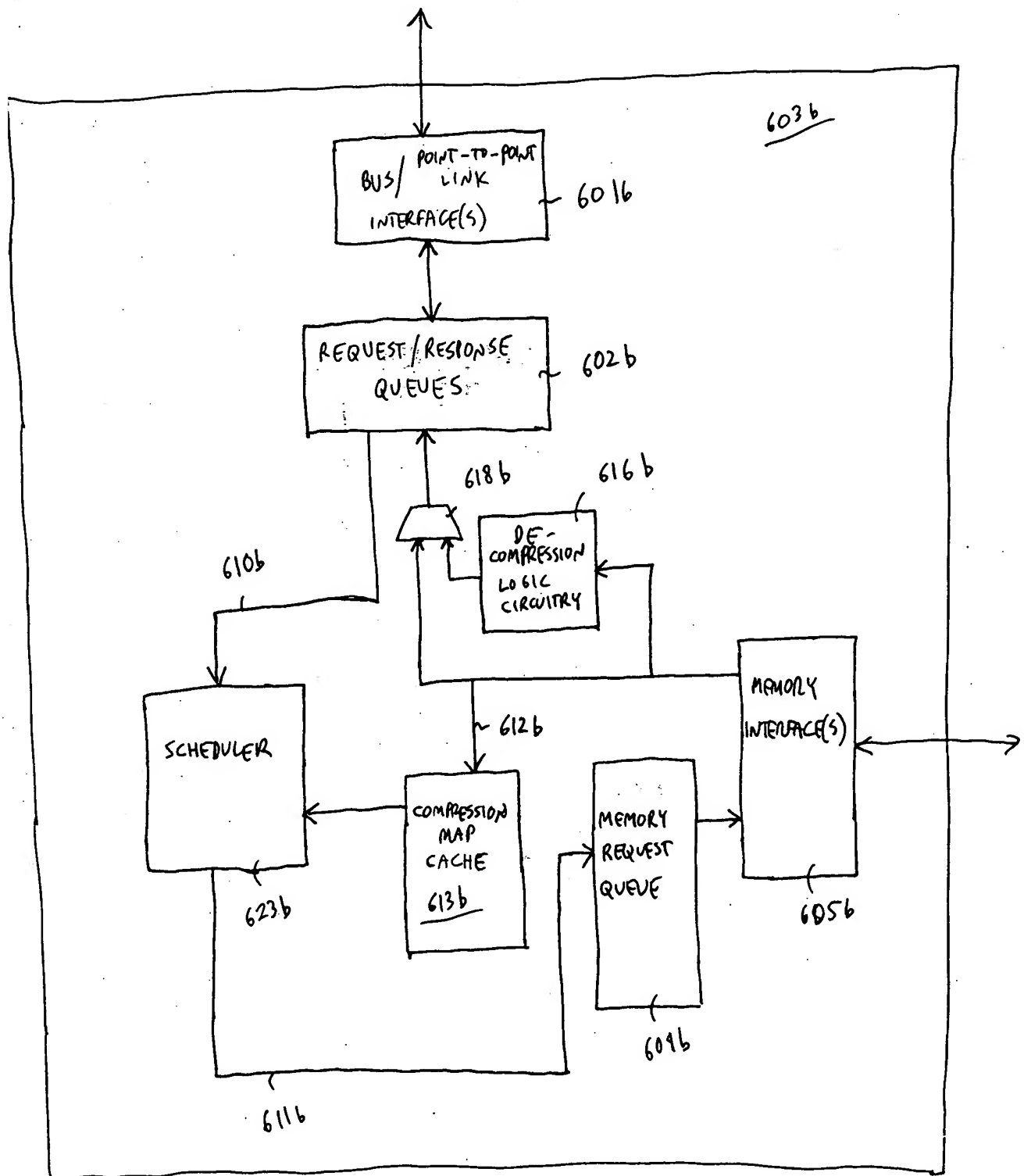


FIG. 6B

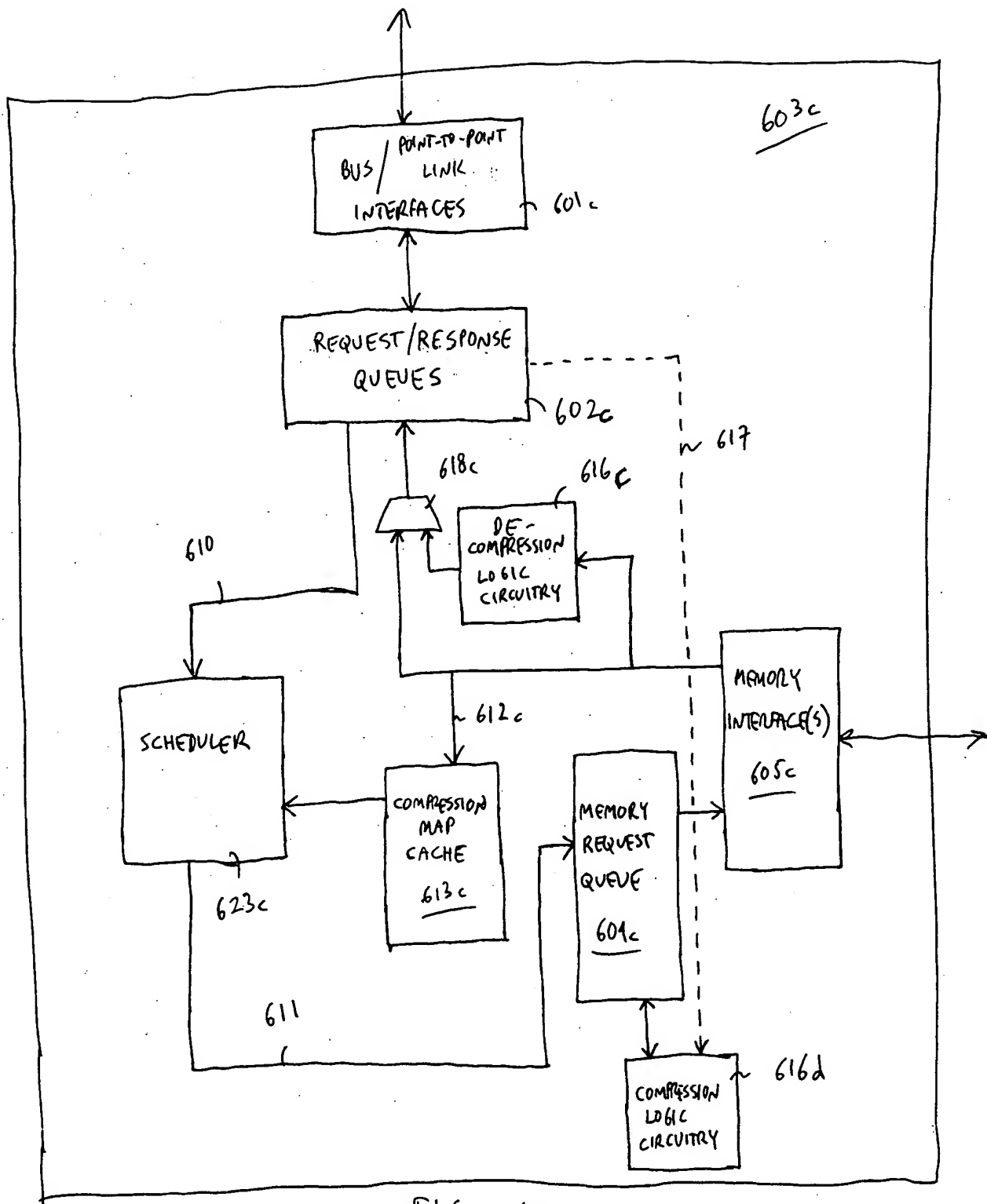


FIG. 6C

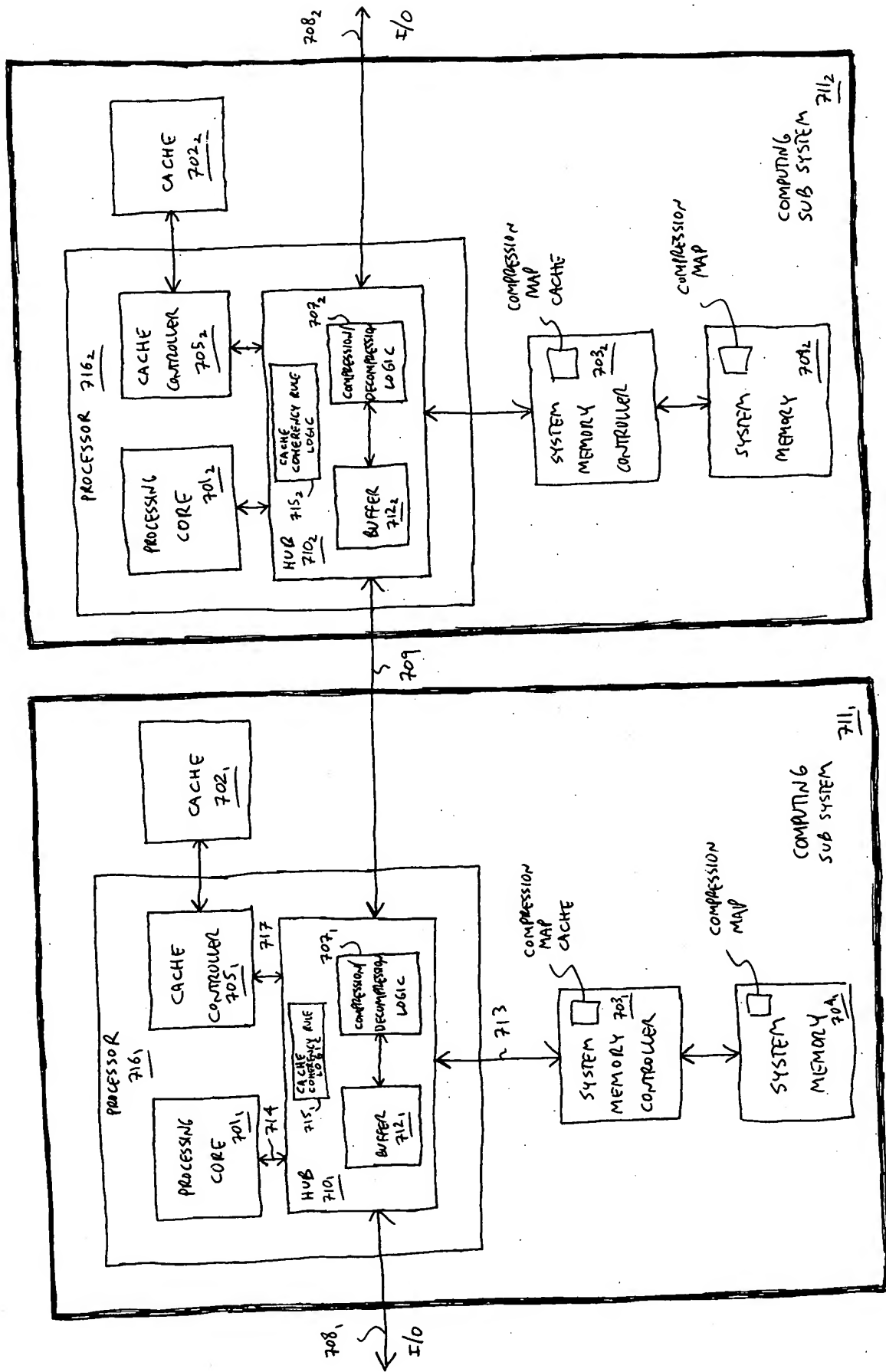


FIG. 7

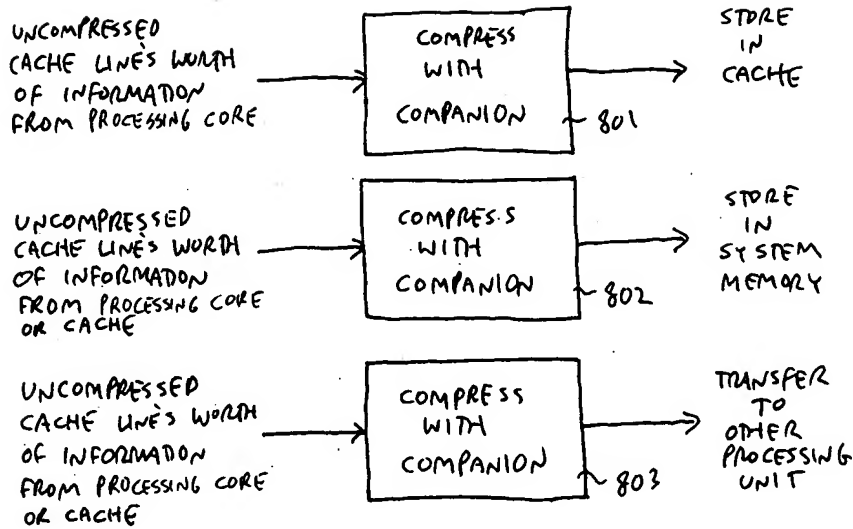


FIG. 8A

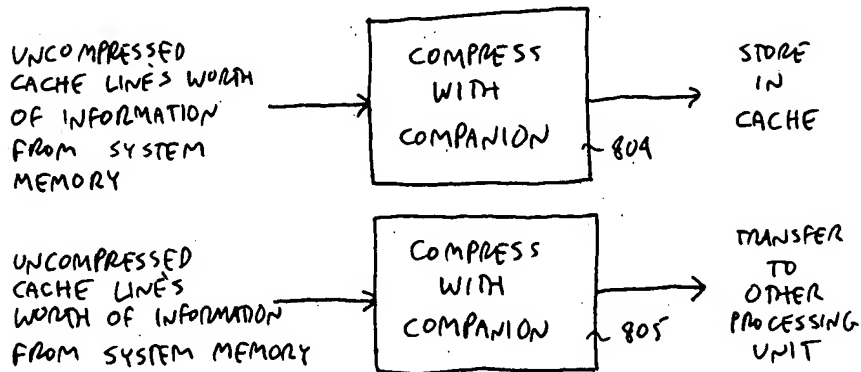


FIG. 8B

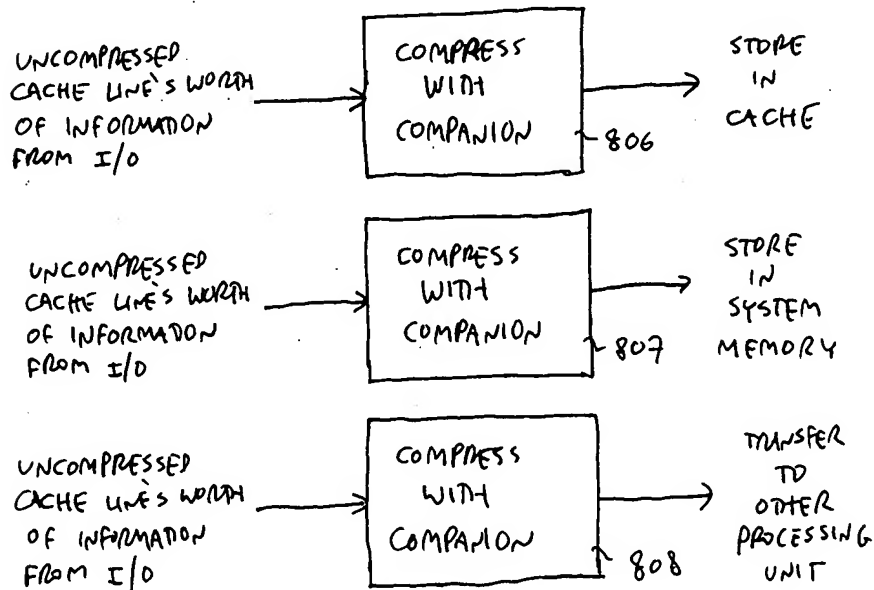


FIG. 8C

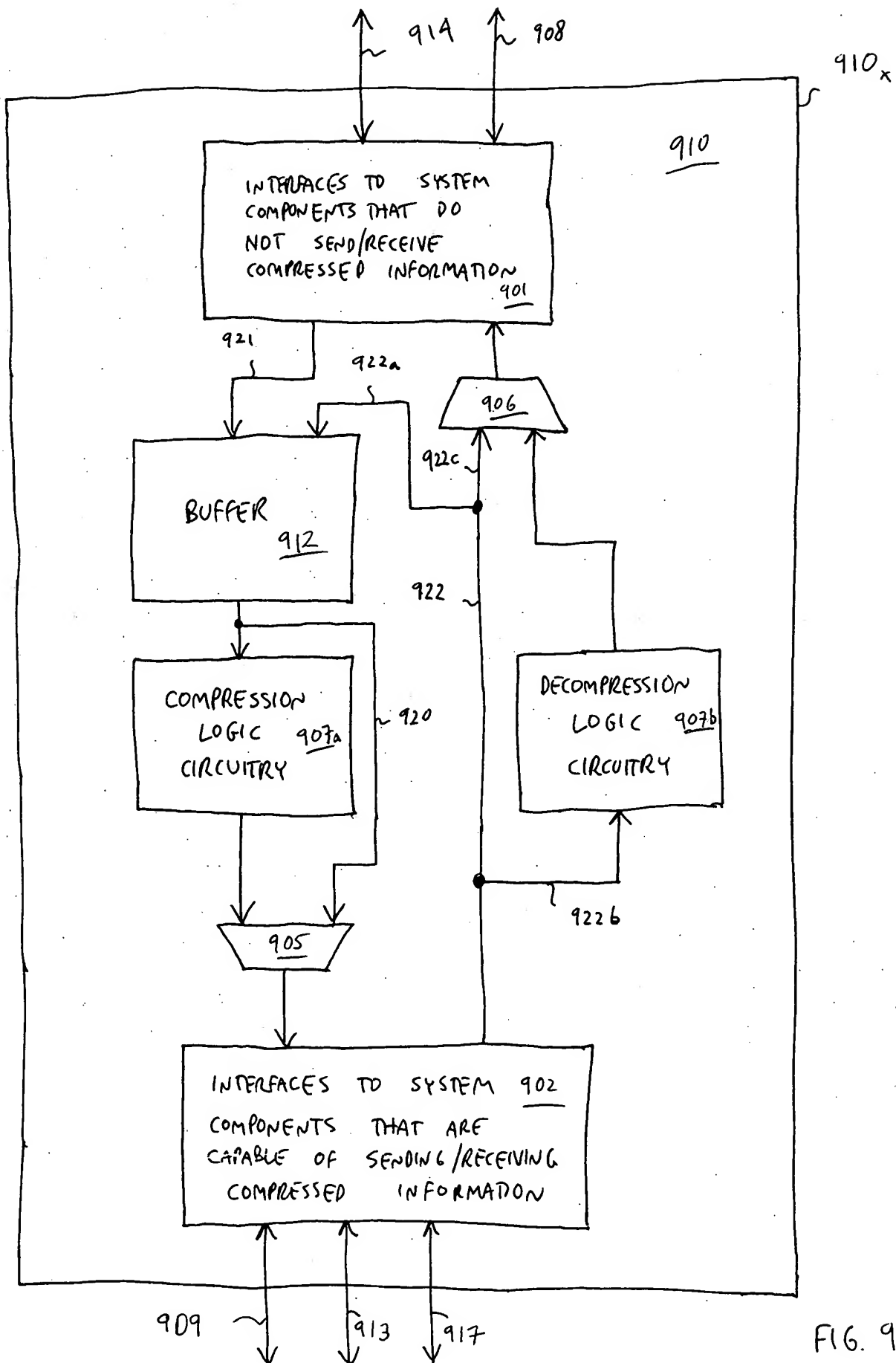


FIG. 9

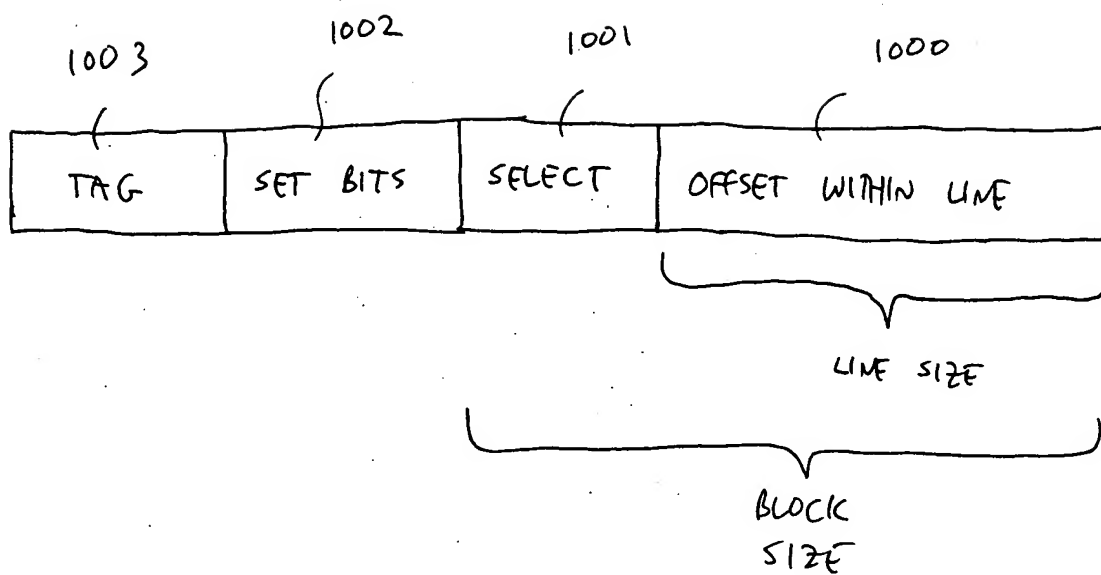


FIG. 10

COMPRESSION MAINTAINED AFTER WRITE

STATE OF COMPRESSED
CACHE LINES WORTH
OF INFORMATION
PRIOR TO WRITE

STATE OF COMPRESSED
CACHE LINES
WORTH OF INFORMATION
AFTER WRITE

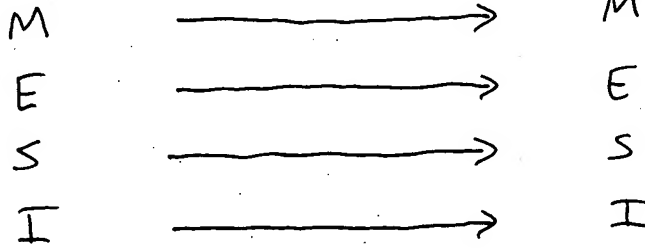


FIG. 11

COMPRESSION NOT MAINTAINED AFTER WRITE

STATE OF COMPRESSED
CACHE LINES WORTH
OF INFORMATION
PRIOR TO WRITE

STATE OF THE
SEPARATED CACHE LINES
WORTH OF INFORMATION
AFTER WRITE

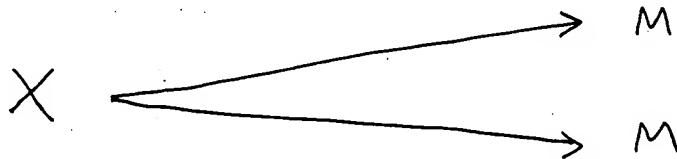


FIG. 12

WRITE CAUSES CREATION OF COMPRESSED
CACHE LINE'S WORTH OF INFORMATION

STATE OF COMPANION
PRIOR TO WRITE

STATE OF COMPRESSED
CACHE LINE'S WORTH OF INFORMATION
AFTER WRITE

M \longrightarrow M

S \longrightarrow M*

*: IF RFO IS NOT ACHIEVED
DO NOT COMPRESS

FIG. 13

READ CAUSES CREATION OF COMPRESSED
CACHE LINE'S WORTH OF INFORMATION

STATE OF COMPANION
PRIOR TO READ

STATE OF COMPRESSED
CACHE LINE'S WORTH
OF INFORMATION
AFTER READ

X \longrightarrow M*

* FOR X = M: IF RFO IS NOT ACHIEVED
DO NOT COMPRESS

FIG. 14

FIRST PROCESSOR REQUESTS
A COMPRESSED CACHE LINE'S
WORTH OF INFORMATION
FOR OWNERSHIP (RFO) ~1501



SECOND PROCESSOR TRANSFERS
THE COMPRESSED CACHE LINE'S
WORTH OF INFORMATION AND
INVALIDATES ITS COPY OF THE
COMPRESSED CACHE LINE'S
WORTH OF INFORMATION ~1502

FIG. 15

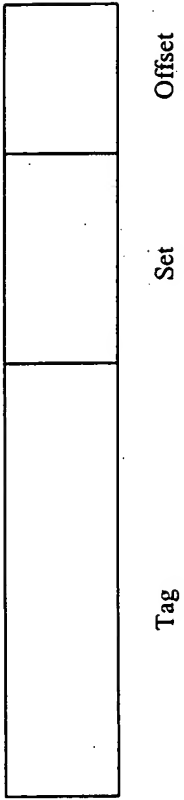


Figure 16A
(PRIOR ART)

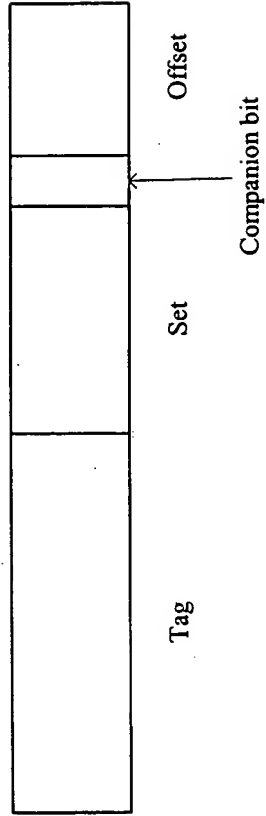


Figure 16B

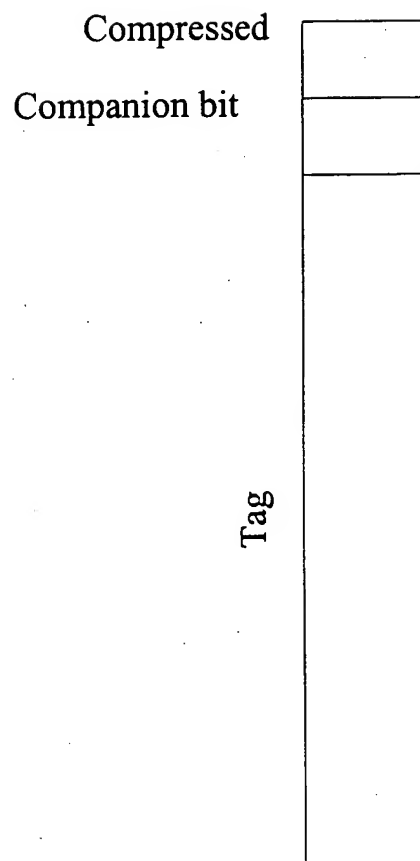


Figure 17

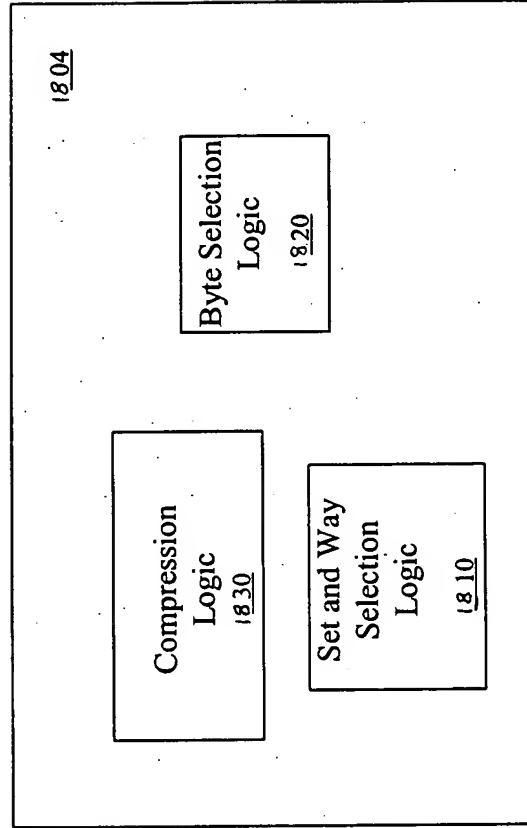


Figure 18

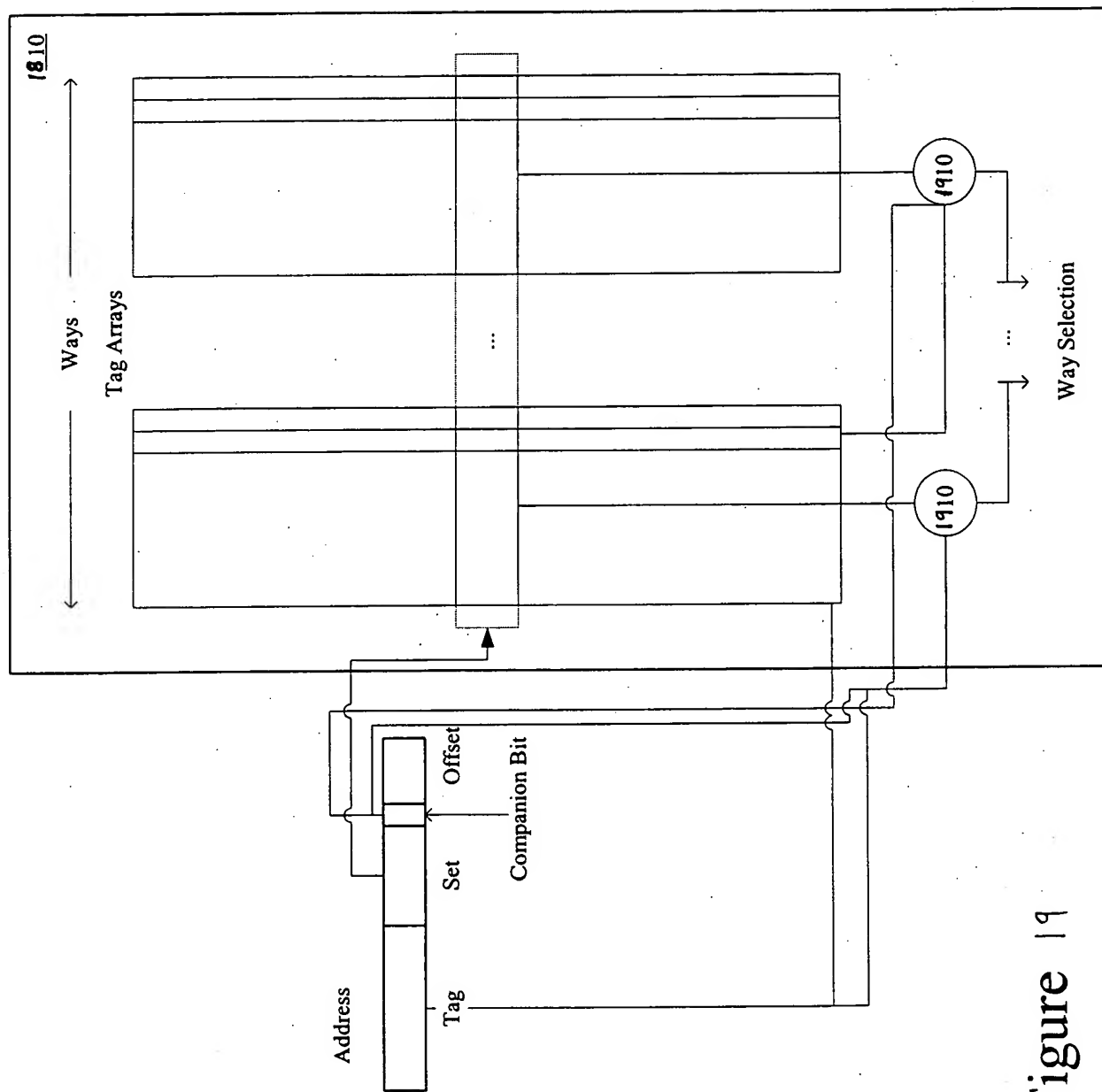


Figure 19

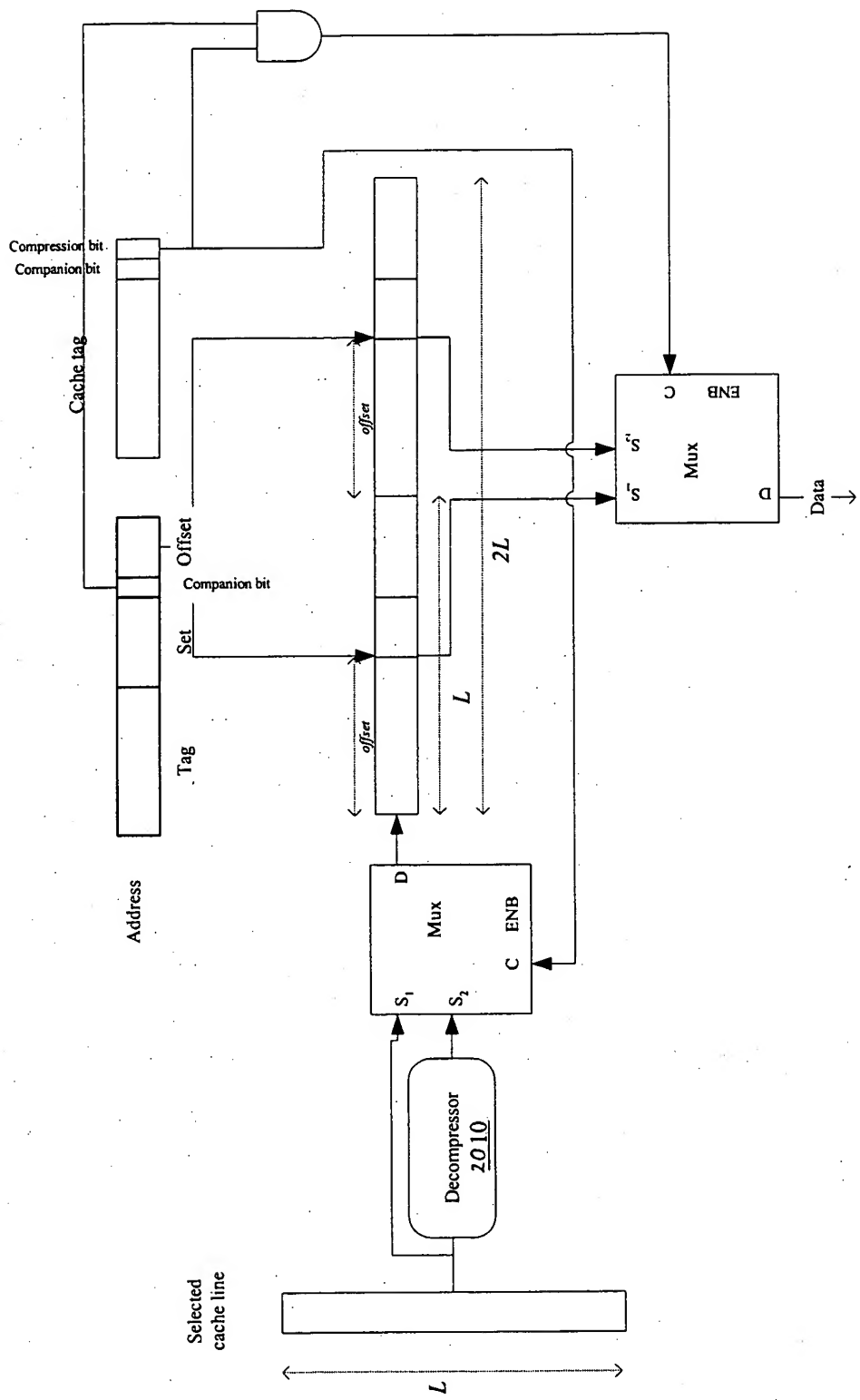


Figure 20